

Figure 1. Prior Art: Conventional PSA

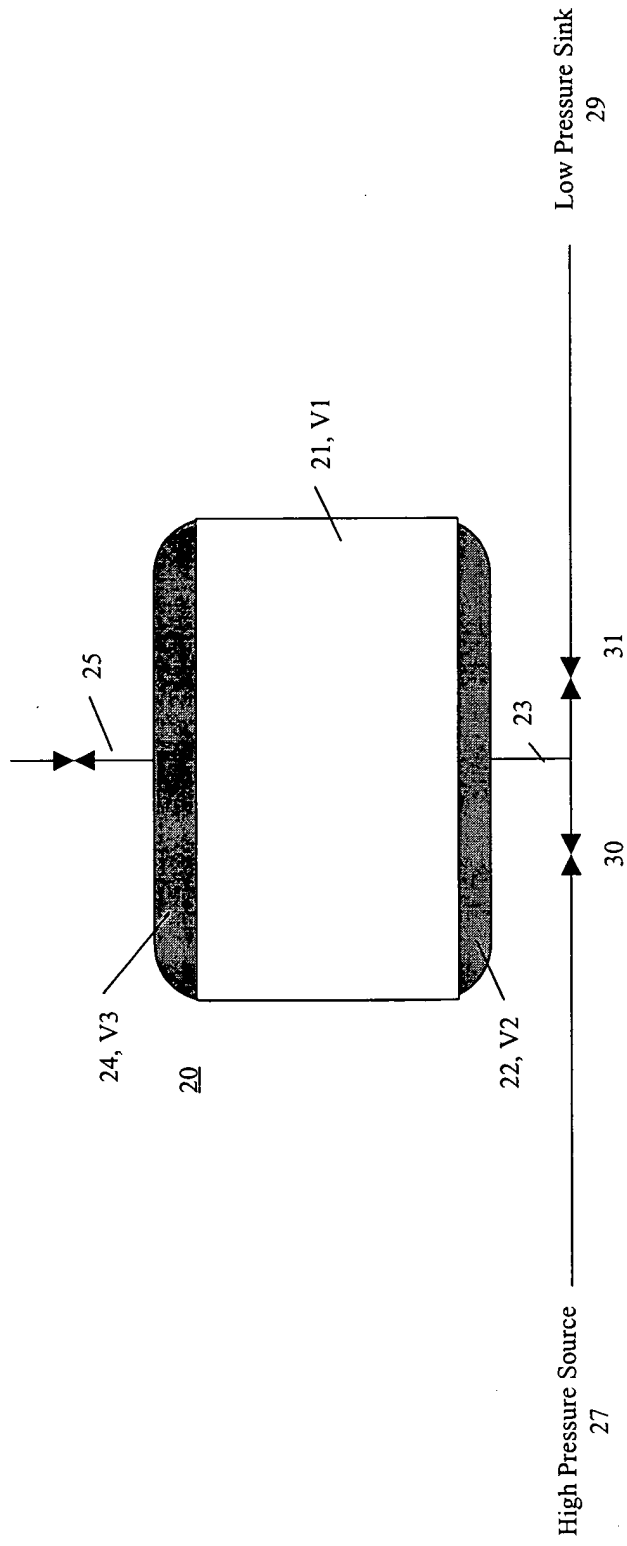


Figure 2a. Invention: Single Bed with Low Void

A schematic diagram consisting of a horizontal line. Two arrows point from left to right along this line. The first arrow is located further to the left and is labeled with the number 34 below it. The second arrow is located further to the right and is labeled with the number 35 below it.

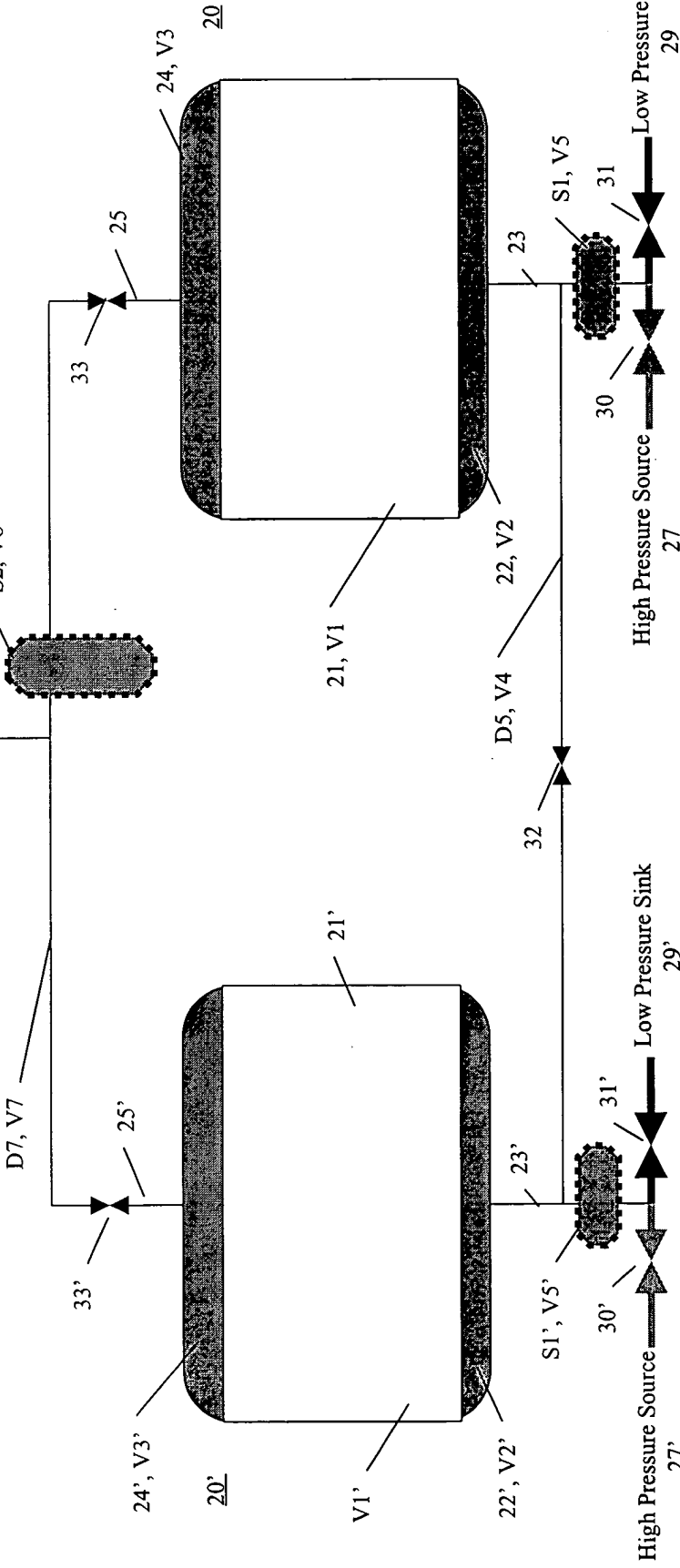


Figure 2b. Invention: Two Bed with Low Void

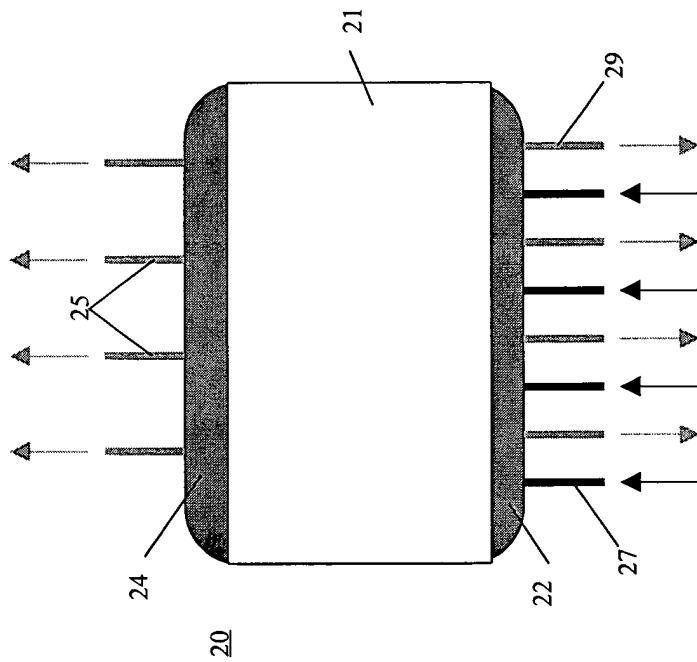


Figure 2c. Invention: Flat Header Bed with Closely Mounted  
High Pressure Sources and Low Pressure Sinks

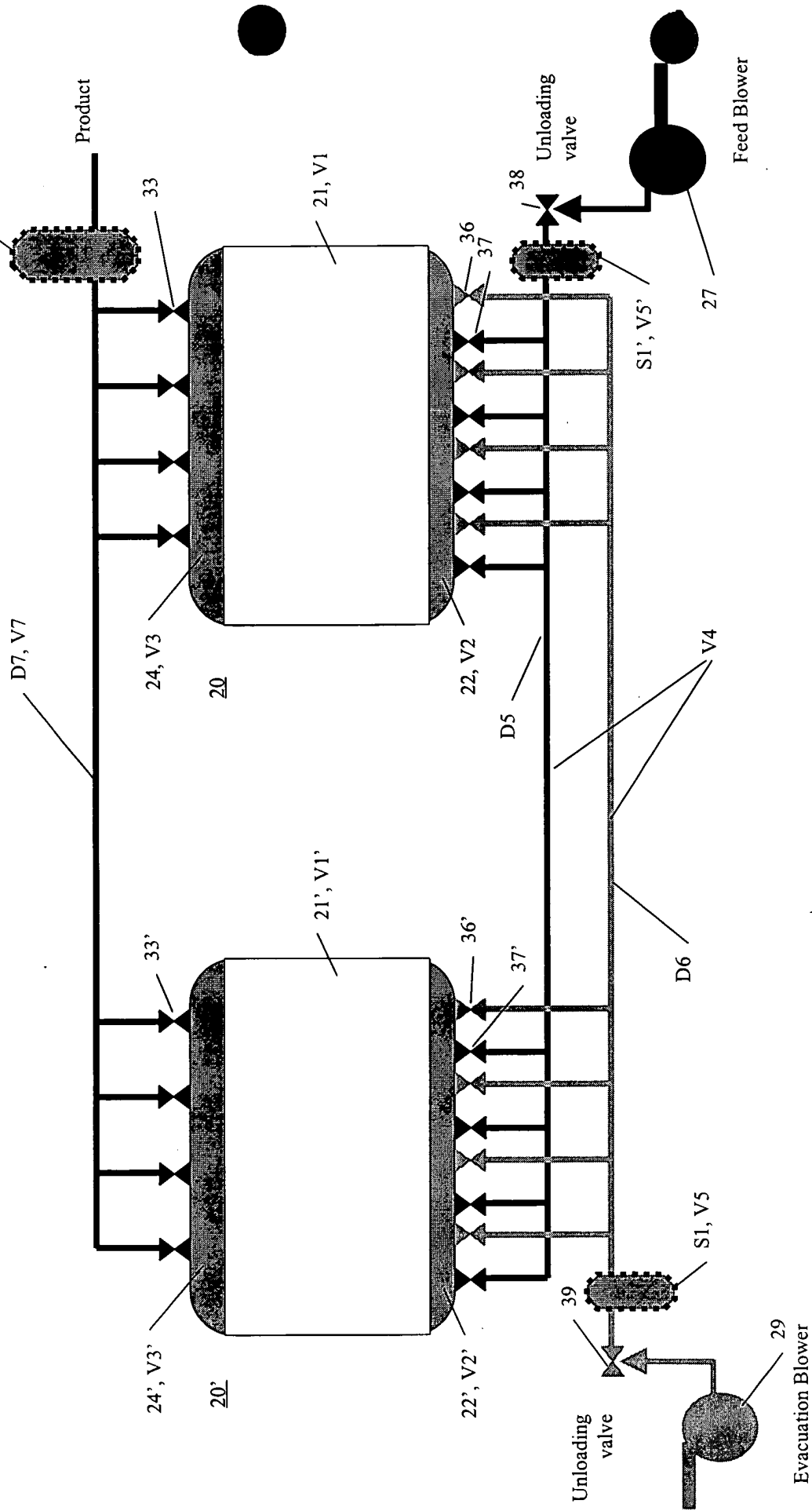
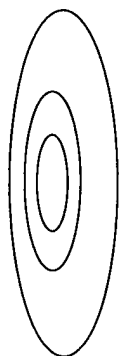
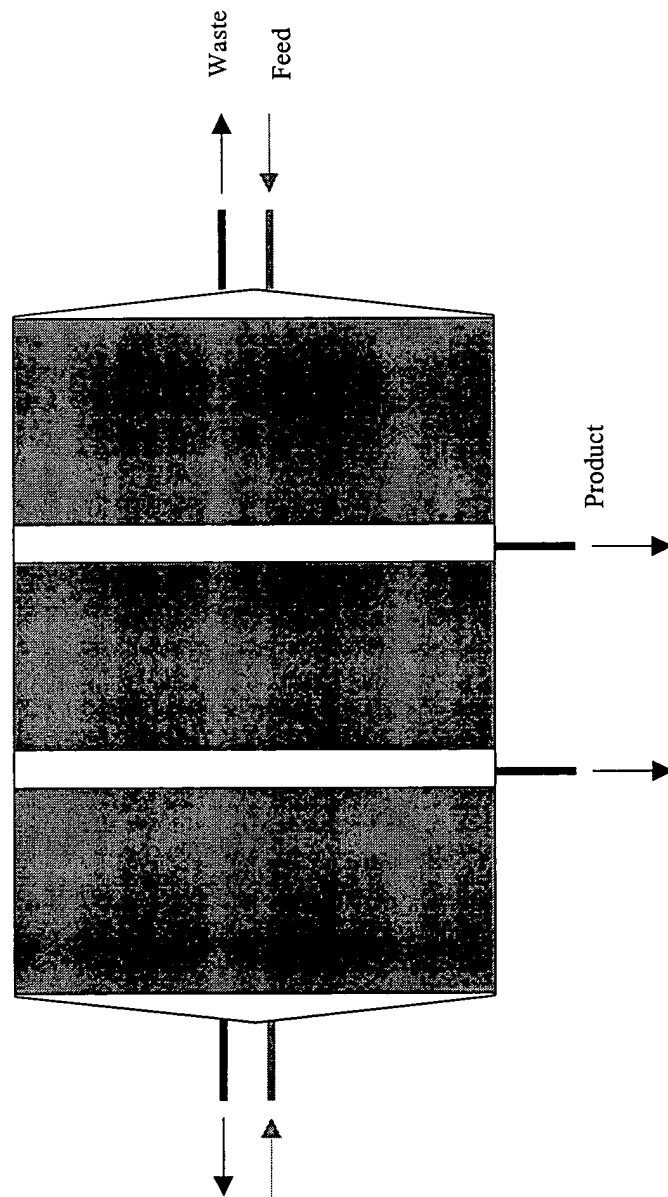


Figure 2d. Invention: Flat Header Bed with Distributed Valves

008760" 00E79560

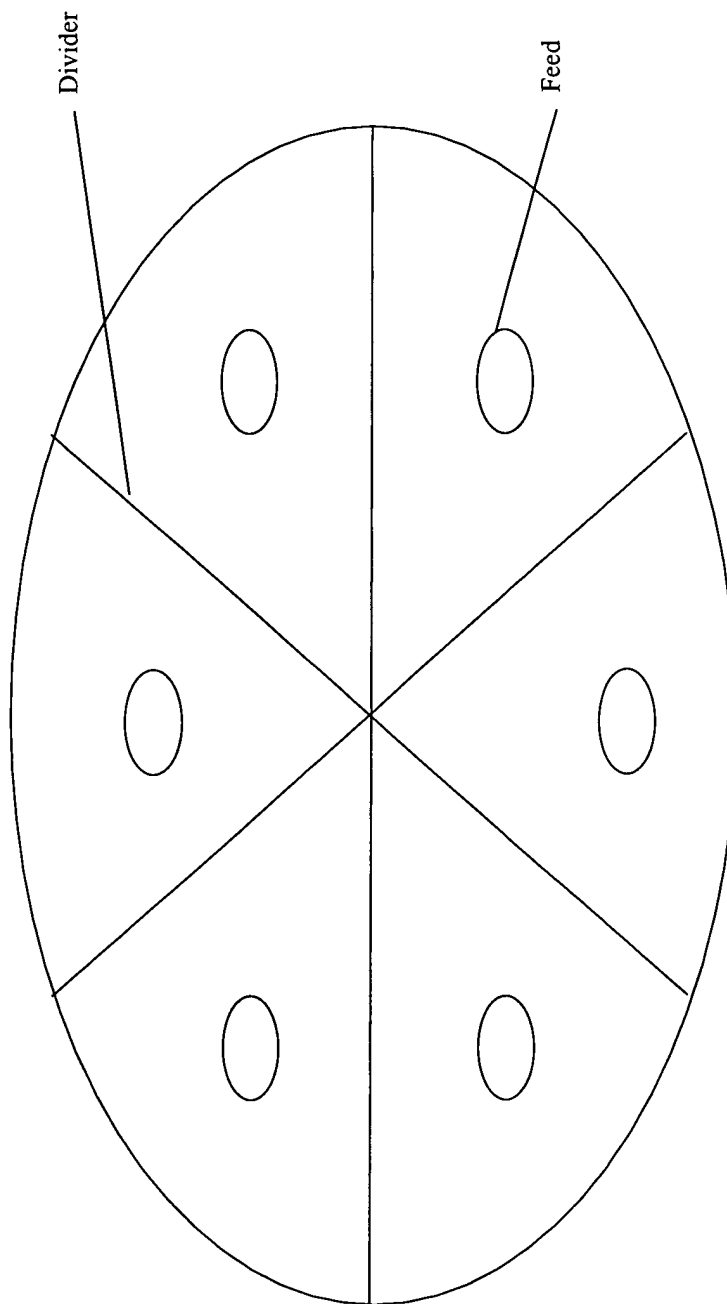


a) Top View



b) Side View

Figure 3. Radial Bed



**Figure 4. Segmented Bed**

Top view of a segmented vertical bed, different sections separated by dividers undergo different PSA process steps such as adsorption, desorption and equalization, etc.



Figure 5. Vertical Plate Bed



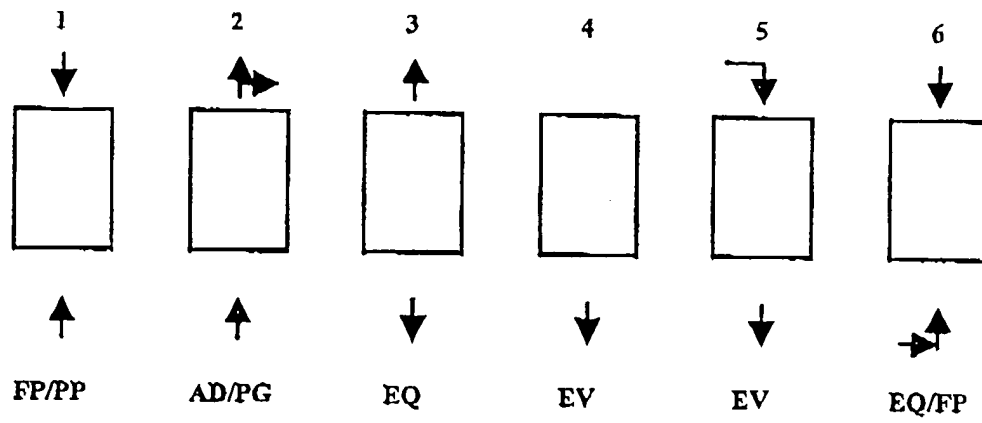


Figure 6 Representative Process Cycle

003750" 06679360

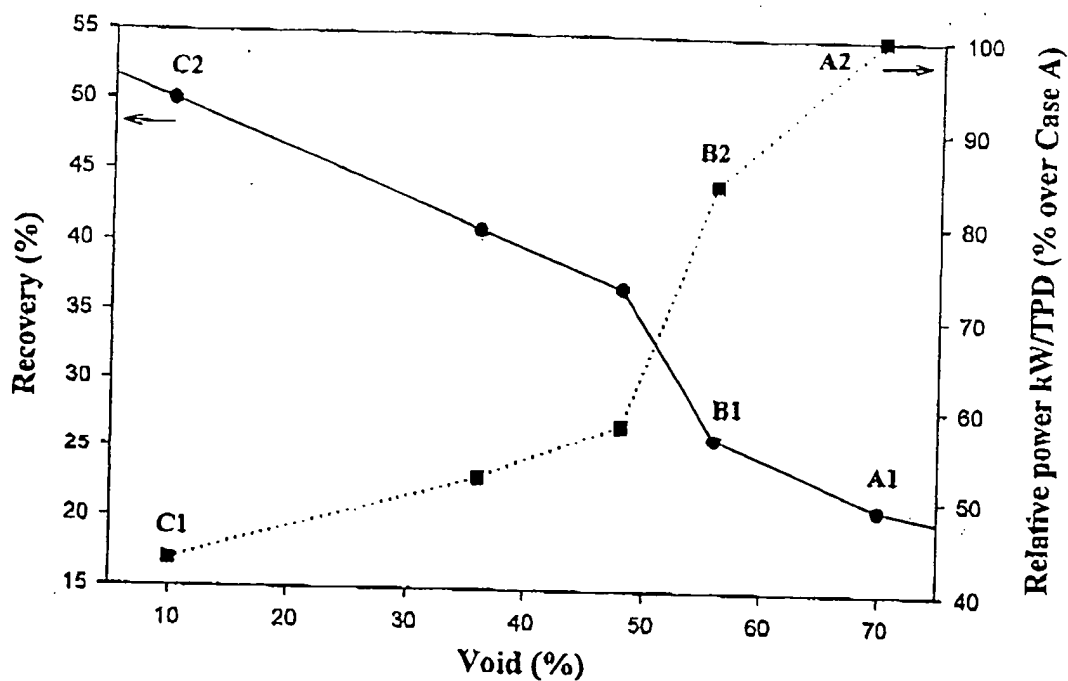


Figure 7 void influence on recovery and power

- Case A: Without the instant invention with large void volume as shown in Figure 1 but with fast cycle time (~2s), low recovery and high power.
- Case B: The instant invention, reduced distribution pipe void volume as shown in Figure 2b.
- Case C: The instant invention, flat header as shown in Figure 2d.

2-Bed system, high and low pressures are 1.5 and 0.3 bars, O<sub>2</sub> purity is 90%, cycle time is about 1~2s.